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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/874,661	06/04/2001	Michael J. Wengler	010069	5763

23696 7590 08/24/2004

Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER

BURD, KEVIN MICHAEL

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/874,661

Applicant(s)

WENGLER, MICHAEL J.

Examiner

Kevin M. Burd

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/11/2003;9/30/200.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 9/10/2001; 9/30/2002; and 3/11/2003 are being considered by the examiner except for three references provided on the 3/11/2003 submission. These three references were submitted in the prior submission on 9/30/2002.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Paragraph 1018 mentions a network 19. The "19" reference number is not shown in figure 2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claim 14 is objected to because of the following informalities: the phrase "the spatial signatures of the received signals" lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-6, 8-12, 14, 18-23, 25-28, 30-34 and 36-38 are rejected under 35 U.S.C. 102(a) as being anticipated by Maruta et al (US 6,205,166).

Regarding claims 1, 9, 10, 17, 18, 26, 27, 31, 32 and 37-39, Maruta discloses a CDMA receiver and a method of using a CDMA receiver comprising a multi-element antenna (figure 1) configured to receive signals from at least one transmitter and to output highly correlated signals (column 3, lines 1-4) from the transmitters. A controller is configured to receive the signals and combine the signals to reproduce the selected signal (column 3, lines 46-50).

Regarding claims 2, 12, 19 and 33, figure 1 shows the number of antennas can be from 2 to N.

Regarding claims 3, 11, 20 and 34, Maruta discloses the antennas are spaced such a distance apart that their output signals are correlated with each other. Such a distance is called a "correlation distance". (column 3, lines 1-4).

Regarding claims 4, 5, 14, 21, 22 and 28, Maruta further discloses the weight coefficients are optimized uniquely to the multipath components of the user "k", so that the antenna gain of the array is strengthened in the arriving direction of the desired signal and weakened in the arriving direction of undesired signals (column 5, lines 44-49). This arriving direction is the "spatial signature of each signal".

Regarding claims 6 and 23, the signals are recombined in adder 8.

Regarding claims 8, 25, 30 and 36, Maruta discloses the channels are maximum-ratio combined in adder 8 (column 3, lines 46-50).

5. Claim 10, 13, 15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhang (US 6,369,758)

Regarding claim 10, Zhang discloses a receiver comprising a multi-element antenna (figure 1) configured to receive signals from at least one transmitter and to output highly correlated signals from the transmitters. The signals will be "highly correlated" because the antennas are located at some distance apart and this distance will provide a correlation between the signals. This correlation value is a "highly

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correlated" value. A controller is configured to receive the signals and combine the signals to reproduce the selected signal (column 4, lines 6-18).

Regarding claims 13, 15 and 16, figure 1 shows the received signals are separated into I and Q signals and these signals are weighted (column 4, lines 6-18). These signals are also demodulated (column 3, lines 62-66).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7, 24, 29 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maruta et al (US 6,205,166) in view of Richard (US 5,901,174).

Regarding claims 7, 24, 29 and 35, Maruta discloses the invention discloses above in paragraph 4. Maruta does not disclose the signals are combined using an optimal combiner. Richard discloses receiving signals via multiple channels and using an optimal combiner. This maximizes the signal to noise ratio and minimizes error signals (column 8, lines 7-10). For this reason, it would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the optimal combiner of Richard in the receiver and method of Maruta.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McNicol (US 2003/0078075) discloses receiving signals via multiple antennas and weighting and combining the received signals to recover a specific user (paragraph 0032).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Thursday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**KEVIN BURD
PATENT EXAMINER**

Kevin M. Burd ••
8/22/2004

Kevin M. Burd